



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/787,875	07/19/2001	Jens Ehlers	1998/G-021	8024

23416 7590 08/22/2003

CONNOLLY BOVE LODGE & HUTZ, LLP  
1220 N MARKET STREET  
P O BOX 2207  
WILMINGTON, DE 19899

EXAMINER
----------

RABAGO, ROBERTO

ART UNIT	PAPER NUMBER
----------	--------------

1713

DATE MAILED: 08/22/2003

13

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/787,875

Applicant(s)

EHLERS ET AL.

Examiner

Rob Rábago

Art Unit

1713

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 16 June 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5, 6 and 8-12 is/are rejected.
- 7) ☒ Claim(s) 4 and 7 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other:

### **DETAILED ACTION**

1. Prior claim objections and rejections under 35 USC 112 are withdrawn in view of amendment. The amendment to claim 1 has broadened the scope of the claims drawn to the making of the polymer by no longer requiring any limitation on the degree to which the polymer particle structure is irregular, and therefore these claims are now open to rejection over references which provide no specific basis for asserting that the polymers produced have an irregular particle structure. Further, the new claims drawn to the making of the catalyst have also been substantially broadened compared with prior claim 8 by deleting the intended-use limitation directed to the making of polymers with specific physical properties, and therefore these claims are now open to rejection over references which describe the making of catalysts suitable for any type of homo- or copolymerization.

### ***Claim Objections***

2. Claim 10 is objected to because in line 2, "claims" should be -- claimed --.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the first and second paragraphs of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 10 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Dependent claim 10, directed to a process for preparing a catalyst, recites Al:Ti ratios which are disclosed only in the section of the specification which discusses an organoaluminum compound as a polymerization cocatalyst (pg. 5, lines 1-10). The ratios of the titanium compound and the organoaluminum compound used during the catalyst preparation reaction are discussed at pg. 4, lines 12-15. Claim 10, which attempts to extract Al:Ti ratios from the polymerization process and newly assert them as components of the catalyst preparation reaction comprises prohibited new matter.

5. Claim 10 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The intended scope of the claimed component ratio range cannot be determined because the range of ratios is not consistent with the parent claim. Claim 9 recites a Ti:Al ratio of from 1:0.01 to 1:4, yet dependent claim 10 recites an Al:Ti range of 1:1 to 30:1, which is not fully within the scope of the parent claim.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 8, 9 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Kortbeek et al. (US 4,306,047).

Example 2 discloses a catalyst for the polymerization of olefins made by reacting 150 mmol  $\text{TiCl}_4$  in 100 ml toluene (1.5 mol/l) with 50 mmol triethylaluminum in 50 ml toluene (1 mol/l) for overall Ti:Al ratio of 3:1 at a temperature of 35°C (col. 4, lines 14-19) over a period of 60 minutes (col. 4, lines 57-59). Therefore, this example contains all claimed limitations.

8. Claims 9 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Rust et al. (US 4,329,256).

Example 2, section 2.1, describes the preparation of a catalyst for the polymerization of olefins comprising the step of combining 36 mmol  $\text{TiCl}_4$  with 180 mmol DEAC at room temperature over a period of five minutes, resulting in a precipitated catalyst component. Example 3, section 3.1, describes an analogous method comprising the step of combining 90 mmol  $\text{TiCl}_4$  with 45 mmol aluminum triethyl at 0°C

Art Unit: 1713

over a period of 30 minutes, resulting in a precipitated catalyst component. The cited examples contain all claimed limitations.

9. Claims 1-3, 5 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Lassalle (US 4,894,424).

The reference describes in each of at least Examples 7 and 11 a process of ethylene polymerization at 80°C which makes a polymer comprising properties of  $M_w/M_n$ , bulk density and particle size which are within the claimed scope (see Table 1). Missing from the reference are measurement of MFR(190/15) and notation of the polymerization reaction pressure. However, patentee has measured MFR(190/5) to be 1.1 and 1.2 for these examples, respectively, and stated that the reaction pressure should be 0.5-5 MPa (col. 10, line 26), and therefore values within the claimed ranges of MFR(190/15) and reaction pressure appear to be inherent in the cited examples.

Regarding the product-by-process limitations on the catalyst, the reference states in the description of the polymerization method at col. 11, lines 45-53, that the catalyst component comprising tetravalent titanium (see also col. 11, line 24) was combined with trioctylaluminum at 80°C prior to polymerization. Patentee has stated that any temperature from 50-110°C is suitable (see col. 10, lines 21-27), and the record contains no basis to conclude that contacting the reference catalyst components at a temperature of 50°C would result in any significant difference in the resultant polymers compared with contacting such components at 80°C. The burden of proof is shifted to

Art Unit: 1713

applicants to show that the applied reference examples do not contain all claimed limitations. In re Fitzgerald, 619 F.2d 67, 205 USPQ 594 (CCPA 1980).

***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kortbeek et al. (US 4,306,047).

The parent claim is discussed with respect to this reference above. The only claimed element missing from the cited example is the use of a saturated hydrocarbon solvent. However, patentee discloses same at col. 2, lines 26-29. One of ordinary skill in the art would be motivated to use a saturated hydrocarbon solvent in the disclosed catalyst production method because patentee has disclosed these solvents among a short list of suitable alternatives, with reasonable success expected. ✓

12. Claims 8 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rust et al. (US 4,329,256).

The parent claim is discussed with respect to this reference above. Regarding claim 8, the only claimed element missing from the cited example is the order of adding

Art Unit: 1713

the Ti component to the Al component (the reference process recites adding the Al component to the Ti component). However, patentee states either order of adding components is satisfactory (col. 4, lines 37-41). Regarding claim 11, the only claimed element missing from the cited example is the use of a saturated hydrocarbon solvent. However, patentee discloses same at col. 4, lines 29-36. In each case, one of ordinary skill in the art would be motivated to use the claimed embodiment because patentee has recommended it among a short list of suitable alternatives, with reasonable success expected. The record contains no evidence to indicate that either the order of combining components or the solvent selection results in any unexpected results. ✓

***Allowable Subject Matter***

13. Claims 4 and 7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. In claim 4, the references of record have not disclosed or reasonably suggested a polymerization process which results in a polymer having the claimed value of bulk density in combination with all of the remaining limitations. The closest prior art is Lassalle et al. which discloses a bulk density of no lower than 0.29 (see example 7 of Table 1).

In claim 7, the second clause is understood to implicitly require a method step in the product-by-process description of the catalyst wherein the Ti(IV) component and the organoaluminum component are combined and reacted as liquids of the stated concentrations. The prior art cited on this record has not described such a catalyst

Art Unit: 1713

production process in combination with a polymerization process which results in a polymer with the claimed properties. In view of the unpredictability of the catalytic art, it cannot be concluded that the catalyst used in the method of Lassalle would be within the scope of the catalyst required in claim 7 because a substantially different method of preparing the catalyst was employed.

### ***Conclusion***

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rob Rábago whose telephone number is (703) 308-

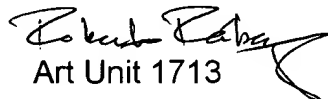
Art Unit: 1713

4347. The examiner can normally be reached on Monday - Friday from 7:30 am - 3:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached at (703) 308-2450. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

ROBERTO RABAGO  
PATENT EXAMINER

  
Art Unit 1713

RR  
August 14, 2003